

WHAT IS CLAIMED IS:

1. An ignition resistant polymeric composite comprising, a) a polymeric substrate; b) a flame retardant intermixed with the polymeric substrate; and c) a partially oxidized plasma polymerized organosilicon layer adhered to the substrate.
- 5 2. The ignition resistant polymeric composite of Claim 1 wherein the polymeric substrate is selected from the group consisting of a polystyrene, an ABS, a polycarbonate, a copolymer blend of a polycarbonate and an ABS, a thermoplastic polyurethane, a thermoset polyurethane, a polyetherimide, a polyamide, a polyaramid, a polyetheretherketone, a polysulfone, a polylactic acid, an epoxy laminate, a vinyl ester laminate, a cyanate ester composite, a polyolefin, a rubber, a
10 polyvinyl chloride, and a terephthalate.
3. The ignition resistant polymeric composite of Claim 2 wherein the plastic substrate is a copolymer blend of a polycarbonate and an ABS.
4. The ignition resistant polymeric composite of Claim 3 wherein the flame retardant
15 is an ignition resistant phosphate compound.
5. The ignition resistant polymeric composite of Claim 4 wherein the partially oxidized plasma polymerized organosilicon layer adheres to the substrate by way of a surface pretreatment layer.
6. The ignition resistant polymeric composite of Claim 5 wherein the surface
20 pretreatment layer is formed by either of 1) plasma pretreatment of the substrate in the presence of oxygen- or nitrogen-containing molecules or 2) plasma polymerization of an organosilicon compound using a stoichiometric excess of the organosilicon compound with respect to oxygen.
7. The ignition resistant polymeric composite of Claim 6 wherein the surface
25 pretreatment layer is formed by plasma polymerization of an organosilicon compound in the absence of oxygen.

8. The ignition resistant polymeric composite of Claim 4 wherein the concentration of the ignition resistant phosphate compound is not greater than 10% by weight, based on the weight of the phosphate and the plastic substrate.
9. The ignition resistant polymeric composite of Claim 5 wherein the concentration of the ignition resistant phosphate compound is not greater than 7.5% by weight, based on the weight of the phosphate and the plastic substrate.
10. The ignition resistant polymeric composite of Claim 7 wherein concentration of the ignition resistant phosphate compound is not greater than 5.5% by weight, based on the weight of the phosphate and the plastic substrate.
11. An ignition resistant polymeric composite comprising, a) a substrate containing a blend of a polycarbonate and an ABS; b) a phosphate flame retardant intermixed with the plastic substrate; c) partially oxidized plasma polymerized organosilicon layer adhered to the substrate; and d) a surface pretreatment layer that promotes adhesion of the partially oxidized plasma polymerized organosilicon layer to the substrate.
12. The ignition resistant polymeric composite of Claim 11 wherein the phosphate flame retardant is selected from the group consisting of resorcinol bis(dixylenyl phosphate), bisphenol A diphosphate, and triphenyl phosphate.
13. The ignition resistant polymeric composite of Claim 11 wherein the substrate contains from 60% to 90% of the polycarbonate by weight and from 10% to 40% of the ABS by weight, based on the weight of the polycarbonate and the ABS.
14. The ignition resistant polymeric composite of Claim 13 wherein the partially oxidized plasma polymerized organosilicon layer has the formula $\text{SiO}_x\text{C}_y\text{H}_z$, where x is not less than 1.0; y is not less than 0.2; and z is greater than or equal to 0.

15. The ignition resistant polymeric composite of Claim 13 which further includes an SiO_x layer superposing the partially oxidized plasma polymerized organosilicon layer, wherein x is in the range of 1.6 to 2.0.
16. The ignition resistant polymeric composite of Claim 11 which is an enclosure for a computer casing, a monitor housing, a calculator, a cell phone, a television set, a DVD player, or a CD players.

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